

In the Claims

Claims 1, 13, 23, 32, 36, 37, 42, 43, 45, 58, 59 and 67 are amended.

Claims 27, 28, 35, 44, 60 and 61 are canceled without prejudice.

Claims 1-26, 29-34, 36-43, 45-59 and 62-67 remain in the application and are listed as follows:

1. (Currently Amended) A computing device comprising:
one or more processors;
memory operably associated with the one or more processors; and
a context service module loadable in the memory and executable by the one or more processors to receive context information from one or more context providers and process the information to determine a current device context by determining, from the context information, at least one node associated with the context information and traversing at least a portion of [[a]] multiple different hierarchical tree structures one of which said at least one node comprises a part, wherein at least one of the tree structures is linked with and touch points into another of the tree structures.

2. (Original) The computing device of claim 1 embodied as a mobile computing device.

3. (Original) The computing device of claim 1 embodied as a desktop computing device.

1 4. (Original) The computing device of claim 1, wherein the device
2 comprises cache memory that maintains a current device context.

3
4 5. (Original) The computing device of claim 1, wherein the context
5 service module is configured to automatically receive the context information
6 from the context providers.

7
8 6. (Original) The computing device of claim 1, wherein the context
9 service module is configured to automatically receive the context information
10 from the context providers and, as the context of the computing device changes,
11 process the information to determine a new current device context.

12
13 7. (Original) The computing device of claim 1, wherein the context
14 service module is configured to request context information from one or more of
15 the context providers.

16
17 8. (Original) The computing device of claim 1, wherein the context
18 service module is configured to provide information concerning a current device
19 context to one or more applications.

20
21 9. (Original) The computing device of claim 8, wherein the context
22 service module is configured to receive a request from the one or more
23 applications that request the current device context information.

10. (Original) The computing device of claim 1 further comprising a context provider interface associated with the context service module, the context provider interface comprising a common interface that is capable is receiving context information from multiple different context providers.

11. (Original) The computing device of claim 1 further comprising one or more application program interfaces (APIs) operably associated with the context service module, the one or more APIs being callable by one or more applications to acquire information concerning the current device context.

12. (Original) The computing device of claim 1 further comprising one or more events that are configured for use by one or more applications so that the applications can register to receive information concerning a current device context responsive to the occurrence of one or more events.

13. (Currently Amended) A computing device comprising:
one or more processors;
memory operably associated with the one or more processors; and
a location service module loadable in the memory and executable by the one or more processors to receive location information from one or more location providers and process the information to determine a current device location by determining, from the location information, at least one node associated with the location information and traversing at least a portion of [[a]] multiple hierarchical tree structures one of which said at least one node comprises a part, wherein at

1 least one of the tree structures is linked with and touch points into another of the
2 tree structures.

3
4 14. (Original) The computing device of claim 13 embodied as a mobile
5 computing device.

6
7 15. (Original) The computing device of claim 13 embodied as a desktop
8 computing device.

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10 16. (Original) The computing device of claim 13, wherein the location
11 service module is configured to automatically receive the location information
12 from the location providers.

13
14 17. (Original) The computing device of claim 13, wherein the location
15 service module is configured to automatically receive the location information
16 from the location providers and, as the location of the computing device changes,
17 process the information to determine a new current device location.

18
19 18. (Original) The computing device of claim 13, wherein the location
20 service module is configured to request location information from one or more of
21 the location providers.

22
23 19. (Original) The computing device of claim 13, wherein the location
24 service module is configured to provide information concerning a current device
25 location to one or more applications.

1
2 20. (Original) The computing device of claim 13, further comprising a
3 location provider interface associated with the location service module, the
4 location provider interface comprising a common interface that is capable is
5 receiving location information from multiple different location providers.
6

7 21. (Original) The computing device of claim 13, further comprising one
8 or more application program interfaces (APIs) operably associated with the
9 location service module, the one or more APIs being callable by one or more
10 applications to acquire information concerning the current device location.
11

12 22. (Original) The computing device of claim 13, further comprising one
13 or more events that are configured for use by one or more applications so that the
14 applications can register to receive information concerning a current device
15 location responsive to the occurrence of one or more events.
16

17 23. (Currently Amended) A computing device comprising:
18 one or more processors;
19 one or more computer-readable media;
20 at least ~~one~~ two separate and different hierarchical tree structures resident
21 on the media, one of which ~~and~~ comprising multiple nodes each of which
22 represents a geographical division of the Earth, the other of which comprising
23 multiple nodes each of which represent a physical or logical entity, wherein the
24 other of the hierarchical tree structures is linked with and touch points into the one
25 hierarchical tree structure; and

1 a location service module loadable in the memory and executable by the
2 one or more processors to receive location information from one or more location
3 providers and process the information to determine a current device location that
4 comprises a node of the hierarchical tree structure.

5
6 24. (Original) The computing device of claim 23 embodied as a mobile
7 computing device.

8
9 25. (Original) The computing device of claim 23 embodied as a desktop
10 computing device.

11
12 26. (Original) The computing device of claim 23, wherein the location
13 service module is configured to determine the current device location by
14 traversing multiple nodes of the hierarchical tree.

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16 27. (Canceled).

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18 28. (Canceled).

19
20 29. (Original) The computing device of claim 23, wherein the location
21 service module is configured to provide information concerning a current device
22 location to one or more applications for rendering location-specific services.

1 30. (Original) The computing device of claim 29, wherein the location
2 service module is configured to receive calls from the one or more applications
3 that request the information concerning the current device location.

4
5 31. (Original) The computing device of claim 29, wherein the location
6 service module is configured to register one or more applications for notification
7 of information concerning a current device location upon the occurrence of a
8 definable event.

9
10 32. (Currently Amended) A computing device comprising:
11 one or more processors;
12 one or more computer-readable media;
13 ~~at least one~~ multiple hierarchical tree structures resident on the media, one
14 of said trees ~~and~~ comprising multiple nodes each of which represents a physical or
15 logical entity, said one tree structure being linked with and touch pointing into
16 another of the tree structures, wherein said one tree structure comprises an
17 organization specific tree structure that has context only within a particular
18 organization; and

19 a location service module loadable in the memory and executable by the
20 one or more processors to receive location information from one or more location
21 providers and process the information to determine a current device location that
22 comprises a node associated with one or more of the hierarchical tree structure.

23
24 33. (Original) The device of claim 32 embodied as a mobile computing
25 device.

1
2 34. (Original) The device of claim 32 embodied as a desktop computing
3 device.

4
5 35. (Canceled).

6
7 36. (Currently Amended) The device of claim 32 further comprising one
8 or more services associated with one or more nodes of the said one hierarchical
9 tree structure, the device comprising an application that is executing on the one or
10 more processors to traverse the said one hierarchical tree structure to ~~located~~
11 locate the one or more service.

12
13 37. (Currently Amended) A location-aware computing system
14 comprising:

15 one or more computing devices;

16 each computing device having a software architecture comprising:

17 a location provider interface that is configured to receive location
18 information;

19 a location service module communicatively associated with the
20 location provider interface and configured to receive the location information from
21 the multiple different location providers and process the information to ascertain a
22 current device location by determining, from the location information, at least one
23 node associated with the location information and traversing at least a portion of
24 [[a]] one of multiple different hierarchical tree structures one of which said at least
25 one node comprises a part, wherein one of said hierarchical tree structures is

1 linked with and touch points into another hierarchical tree structure, and wherein
2 individual different hierarchical tree structures have different root nodes; and

3 one or more application program interfaces (API) or events
4 associated with the location service module and defining a mechanism through
5 which information concerning a current device location can be provided to one or
6 more applications that are configured to provide location-specific services.

7
8 38. (Original) The location-aware computing system of claim 37,
9 wherein at least one of the one or more computing devices comprises a mobile
10 computing device.

11
12 39. (Original) The location-aware computing system of claim 37,
13 wherein at least one of the one or more computing devices comprises a desktop
14 computing device.

15
16 40. (Original) The location-aware computing system of claim 37,
17 wherein the location provider interface is configured to receive location
18 information from multiple different location providers.

19
20 41. (Original) The location-aware computing system of claim 37,
21 wherein the location provider interface is configured to receive location
22 information from multiple different location providers, the location service module
23 being configured to poll one or more of the location providers so that the polled
24 location provider can provide location information to the location provider
25 interface.

1
2 42. (Currently Amended) The location-aware computing system of
3 claim 37 further comprising:

4 one or more computer-readable media; and

5 [[a]] said multiple different hierarchical tree structures being resident on the
6 media, and wherein said another tree structure comprising comprises multiple
7 nodes each of which represent geographical divisional of the Earth, the location
8 service module being configured to process the information to ascertain a current
9 device location that comprises one node on the said another hierarchical tree
10 structure.

11
12 43. (Currently Amended) The location-aware computing system of
13 claim 42, wherein the location service module is configured to ascertain a current
14 device location by traversing at least one of the hierarchical tree structures to a
15 root of the tree structure.

16
17 44. (Canceled).

18
19 45. (Currently Amended) A computer-implemented method of
20 determining a computing device context comprising:

21 receiving, with a computing device, information that pertains to a current
22 context of the device;

23 processing the information on and with the device to ascertain the current
24 context of the computing device by determining, from the information, at least one
25 node associated with the information and traversing at least a portion of [[a]]

1 multiple different hierarchical tree structures one of which said at least one node
2 comprises a part, wherein one tree structure is linked with and touch points into
3 another tree structure and wherein said one and another tree structures have
4 different root nodes.

5
6 46. (Original) The computer-implemented method of claim 45, wherein
7 said receiving comprises receiving the information with a mobile computing
8 device.

9
10 47. (Original) The computer-implemented method of claim 45, wherein
11 said receiving comprises receiving the information with a hand-held computing
12 device.

13
14 48. (Original) The computer-implemented method of claim 45, wherein
15 said receiving comprises receiving the information with a desktop computing
16 device.

17
18 49. (Original) The computer-implemented method of claim 45, wherein
19 the current context is the device location.

20
21 50. (Original) The computer-implemented method of claim 49, wherein
22 the receiving of the information comprise receiving information from multiple
23 different location providers.
24
25

1 51. (Original) The computer-implemented method of claim 50, wherein
2 the information that is received from the multiple different location providers is
3 received in different forms.

4
5 52. (Original) The computer-implemented method of claim 50, wherein
6 the receiving of the information comprises receiving the information through a
7 common interface.

8
9 53. (Original) The computer-implemented method of claim 45, wherein
10 the receiving of the information comprise receiving information from multiple
11 different context providers.

12
13 54. (Original) The computer-implemented method of claim 53, wherein
14 the information that is received from the multiple different location providers is
15 received in different forms.

16
17 55. (Original) The computer-implemented method of claim 53, wherein
18 the receiving of the information comprises receiving the information through a
19 common interface.

20
21 56. (Original) The computer-implemented method of claim 45 further
22 comprising receiving a request from an application for information that pertains to
23 the current context of the mobile computing device and returning at least some
24 information to the application.
25

1 57. (Original) The computer-implemented method of claim 45 further
2 comprising receiving at least one event registration from one or more applications
3 that pertains to an event for which the application is to receive information
4 pertaining to the current context of the computing device, and returning
5 information pertaining to the current context of the computing device to the one or
6 more applications responsive to the occurrence of an event.

7
8 58. (Currently Amended) One or more computer-readable media having
9 computer-readable instructions thereon which, when executed by a computing
10 device, cause the computing device to:

11 receive information that pertains to a current location of the device, the
12 information being received from multiple different location providers; and

13 process the information to map the information to a node of a hierarchical
14 tree structure that comprises multiple nodes that represent either (1) geographical
15 divisions of the Earth or (2) physical or logical entities; and

16 traverse the hierarchical tree structure to ascertain the current device
17 location, wherein said hierarchical tree structure is touch-pointed by and linked
18 with another tree structure from which device location can be ascertained, wherein
19 said tree structures have different root nodes.

20
21 59. (Currently Amended) A computer-implemented method of
22 determining the location of a hand-held, mobile computing device comprising:

23 maintaining [[a]] multiple hierarchical tree structures on the mobile
24 computing device, ~~the one~~ tree structure comprising multiple nodes each of which
25 represent geographical divisions of the Earth, another of the tree structures being

1 linked with and touch-pointing into the one tree structure, wherein said tree
2 structures have different root nodes;

3 receiving information from multiple different location providers that
4 describe aspects of a current device location;

5 processing the information with the mobile device to ascertain a node on
6 one of the tree structures that likely constitutes a current device location; and

7 traversing at least one other node of ~~the~~ said one tree structure to ascertain
8 additional location information that is associated with the current device location.

9
10 60. (Canceled).

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12 61. (Canceled).

13
14 62. (Original) The computer-implemented method of claim 59 further
15 comprising receiving a request from one or more applications for information that
16 pertains to a current device location and providing the one or more applications
17 with the information that pertains to the current device location.

18
19 63. (Original) The computer-implemented method of claim 62, wherein
20 the receiving of the request comprises receiving a call to an application program
21 interface (API).

22
23 64. (Original) The computer-implemented method of claim 62, wherein
24 the receiving of the request comprises receiving an event registration.
25

1 65. (Original) The computer-implemented method of claim 62 further
2 comprising applying a security policy to the information that pertains to the
3 current device location before providing the information to the one or more
4 applications.

5
6 66. (Original) The computer-implemented method of claim 59 further
7 comprising before processing the information to ascertain a node, resolving any
8 conflicts that might exist between information that is received from different
9 location providers.

10
11 67. (Currently Amended) One or more computer-readable media having
12 computer-readable instructions thereon which, when executed by a computing
13 device, cause the computing device to:

14 maintain or access [[a]] multiple hierarchical tree structures on or with the
15 computing device, one of the tree structures comprising multiple nodes each of
16 which represent geographical divisions of the Earth, another of the tree structures
17 being linked with and touch-pointing into the one tree structure, wherein said tree
18 structures have different root nodes;

19 receive information from multiple different location providers that describe
20 aspects of a current device location;

21 process the information with the device to ascertain a node on one of the
22 tree structures that likely constitutes a current device location;

23 traverse at least one other node of the one tree structure to ascertain
24 additional location information that is associated with the current device location;
25

1 receive one or more calls from one or more applications for information
2 that pertains to a current device location, the applications being configured to
3 render location-specific information; and

4 supply at least some information that pertains to the current device location
5 to the one or more applications.
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